

# DRAGON USER



*The independent Dragon magazine*

November 1988

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Hands up the experts who write that within ten pages (and regulations, surely) we try to do it all. We can't! **PRINT**!

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How many samples do you have to drop to estimate medal value right? How long does it take? Can you win Microdeal's new Wizard's Quest?

## Editorial

THERE have been a lot of shake-downs since DU went subscription only in July, and some of them are still shaking. Our special apologies to readers on the tail end of the mailing list, who received their September issues soon after their October ones...

But we have our extra four pages at last, and enough Dragon suppliers have come forward with support this month to put a bit of heart back into our advertising pages. We hope this is how it will go on, although there are bound to be ups and downs.

The news that Winterset have lately given up hope of producing a follow up to Jargonisation is not so heartening, showing as it does just another symptom of the decline in the prosperity of the Dragon world. We wish Winterset all the best in their new careers, and Microdeal further support with their new acquisition.

Roll on the Christmas \$500 Show on November 22nd. It's a good excuse to walk the aisles and start the Christmas shopping early, as well. Two benefits for the price of one. Don't miss it.

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### How to submit articles

The quality of the material we can publish in Dragon User depends on the quality of the submissions that you can make with your Dragon. The Dragon computer was designed to be a market with a potential return of \$500, but with very poor documentation.

Articles should be submitted to Dragon User by postcard, should not be more than 1000 words long. All submissions should be typed. Please leave wide margins and a double space between each line. Programs should, whenever possible, be computer printed on plain white paper and be accompanied by a tape of the program.

We cannot guarantee to return every submitted article as programs, but please keep a copy. If you want to have your program/letter and yourself include a stamped addressed envelope.





# News desk

If you have any new products for the Dragon — software or hardware — ring the News Desk on 01-427 4343



Picture: Jaxxon

## Microdeal in games takeover

ALL THE GAMES FANS in Microdeal defy the trend towards lower priced releases by producing their own games for the Dragon. Indeed the group says that they have taken over Watersall's release schedule. Jaxxon (release — The Directors of Cook) is arguably

development in professional programmers are based out of the Dragon market. It is one of the software houses to sell enough games packages to support good full time programmers to produce new games has also a list of in services, partly written. Time



Picture: Adams and the Golden Chalice

the most popular Dragon game of the last year.

Says Jerry Pope of Microdeal: "We were trying to get hold of them to buy their products from them all this year. Even though we managed to get hold of them and ended up with a deal to buy out all their rights, we're on."

The grappled follow-up to Jaxxon is currently planned as a trilogy, a dub can be adapted to other hardware. It is already well known not to be developed, continuing the trend of new games

and when the game is over was completed by necessity to get a regular job.

The three new programs from Microdeal are Wizard's Quest where the player collects treasures in a haunted mansion; Cumberland and the Golden Chalice, the latest in the Cumberland series with twenty scenes and featured three main characters with 200 locations; five Castles of the Chivalry, and a 200 thousand. Cumberland and Wizard's Quest are reviewed in this issue. Dragon User.

## Utility on cassette

PRIMECAMS tell us that after developing their Source audio cassette to cover a range of cassette decks, they have introduced onto a single cassette version which covers all versions of Dragon DREAM and the disc version. Dragon User will be receiving this cassette later. Then they are now working on WINCAMSOURCE which also advantages as the disk of a First Class Source/Primecam system are available on the disk. We have no release date for this package at yet.

## FLEX for the PC

FOR SEVERAL 6809 based computers have developed the FLEX809 microprocessor development computer system (which do not include the Dragon architecture). FLEX809 consists of a PC compatible which running all the features of the PC computer say Compuserve.

The system costs £495 in UK and delivery for information or demonstration contact Compuserve on 01 562 5661.

## Micro group

FURTHER information about the 6809 microprocessor by the 68 Micro-Group can be contacted via John Johnson at 21 Colinton Ave, Peterborough, Cambs. Mr Johnson is the

principal bulletin. Regular meetings are held in central London and there is a chance to see some of the work of the Microdeal as well.

## Catalogue competition

FOR HARDWARE designers and designers, the Microdeal catalogue from Carol Davies has a lot of interesting developments people will be interested in the new developments. Carol Davies' 1989 Catalogue (1989 October) priced £1.95. Special offer: I want this catalog as a competition to win a 1989 Human Factors catalogue with other releases as prizes for the winners.

For information or to order contact: C 41 at PMA Ltd, Bournemouth, Hants GU10 3BA.

## Hewson recruits

HEWSON computer games are looking for new interface software writers.

You must have the experience to estimate time and memory requirements with reasonable accuracy and the determination and ability to work to the schedule. Hewson's press release: The company will provide financial and business support in selected programmes in developing commercial games in return for a professional level of ability and commitment.

Hewson are at Hewson House, 116, Milton Trading Estate, Milton, Abingdon, Oxon OX14 3PL.

## Christmas 6809 show

MICRODEAL'S 6809 Christmas Show takes place on November 22nd at the Royal Horticultural Hall in Westminster, London. The National Dragon Users Group and the FRS 50 Users Group will be there as well as trade exhibitors.

Visitors are advised that admission is free.

going in the Victoria area although as had in central London, can be a busy experience. For those who choose to park, but not out and back in on the Underground system, or by British Rail, the nearest stations are Victoria (main line) or Victoria at St James Park (underground), all of which the about ten minutes walk from the Horticultural Hall. A "bus stop" is located near the Victoria Station.

Further information from Microdeal on 01 726 5320.

# Communication

Send in your questions, requests, and plans to Communication, Dragon User, 13-13 Little Newport Street, London WC2E.

**Problem:** How can anyone cut through a copy-a-line? Calc along with the appropriate in standard which they can pass around? What I really require is a powerful spreadsheet program which does not run under OS 9.

**Enquirer:** D. Lamb, 9 Elmie Way, Bristol BS5.

**Problem:** I have built Analtek Data Design's Address and would be interested to know if anyone out there has also built it, as I have been unable to get it to work properly under software control. If anybody has got it to work, please contact me.

**Enquirer:** John Maguire, 24 Canon Young Place, 10th North, Leamington Spa Warwick CV34 2DA.

**Problem:** I own a Dragon 32 and I am looking for a detailed memory map. I only own the small one from the additional information section of the manual. I am particularly interested in addresses and the different functions of the bus, as in the addresses from FFFF toFFFF. Could anyone send me with that information or let

me know if I had it?

I am also looking for a Dragon user's manual that explains how to use basic. If you know one or several, please get in touch. **Enquirer:** P. Scherrenberg, 1 rue Guro B. 4000 Sankt Ag, Belgium. **Problem:** I have been looking for the Microsoft Extended Basic and the DragonDOS ROM for some time to find out how the machine code works. I have used the Q software DSADREAM package. It has some extra lines code, so I wonder if anyone knows where I can get a copy of

the original assembly source code being for these ROMs? **Enquirer:** Olav Hovind, Mossberg, Østfold, N 3640. **Enquirer:** Money. **Problem:** I have been trying to write a routine to convert the keys on my Dragon 32. The last my below is my best effort but it appears to fail. It fails in a delay, it slows the computer down drastically. Can anyone help? Also, where is a machine code routine to get the text for graphics screen update down? **Enquirer:** L. COOPER, STX BT30.

**RTS:** STMT LDR 0200 LOOP LDRSFFFF STX 4 CMR 0204 BNE LOOP JMP SSO00 **Enquirer:** Phil p. Catalogue 34 Parkway Road, Moss's Station ST17 9BY. **Problem:** On the Macintosh, how can I define the user-definable codes? **Enquirer:** Daniel Lawrence, 25 Leas Road, Lymington, Hants, old Westbury H00 3LS.

## Communication

Stuck for a routine? Need some obscure equipment? Feeling out of it? Fear not — someone somewhere can help you! Write down your problem on the coupon below (printed as brief and legible as possible) together with your name and address and send it to Communication, Dragon User, 13/13 Little Newport Street, London WC2E 7PP. We'll publish it as soon as we can — or, if suitable, maybe there's someone you can help this month!

<b>Problem</b>	.....
<b>Name</b>	.....
<b>Address</b>	.....

## S.P. ELECTRONICS

GPA 80 Dot Matrix Printer, inc. Printer Cable

£228.00

Parallel Printer Cable

£17.90

Cannon 160 CPS NLO Printer, inc. Printer Cable

£299.00

Green Screen Monitors

£85.00

Disk Drives from

£129.50

A large range of software available  
SAE for free list  
Large range of spares available

**Also complete Dragon repair service**

**S.P. ELECTRONICS**

48 Limby Road Bucknall, Notts  
(Nottingham NG4 6JZ)



# BLOCK-BUSTER QUIZ II

To enter the prize draw in this quiz, fill in the coupon below.

1. Write down the name of the computer you own.

2. Write down the name of the software you own.

3. Write down the name of the hardware you own.

4. Write down the name of the software you own.

5. Write down the name of the hardware you own.

**COMPUTERWARE**

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Q U I C K B E A M   S O F T W A R E

# FIRE FORCE

- Unusually large sprites
- Hi Res colour graphics
- Four channel musical soundtrack by Chris Jolly
- Joystick operation

**£1 off!**

• Quickbeam Software's hi game Shaolin Master proved a winner with Dragon Users. Now Quickbeam and Dragon User are getting together to offer Quickbeam's new game, FIRE FORCE — at a pound off the retail price. The offer is open to Dragon User subscribers only, until 21st November — so hurry.

• FIRE FORCE is Quickbeam's follow-up to the successful Shaolin Master. It has taken three programmers six months to develop the two-stage arcade game, which has up to nine moving sprites on screen at a time. The game opens with you, the leader of the commando Fire Force, faced with squads of enemy troops as you dodge your foes, trees and gateways to search for the prototype MFTC X18 SPIRIT low level attack plane which has been hi-jacked and forced down in a clearing deep in the African forests. If you can reach the plane alive, the second challenge begins: to fly the machine to safety, avoiding obstacles and the enemy's planes, collecting energy packs as you go by swooping close to the ground.

• The manoeuvrable X18 Spirit appears on screen as a large, detailed sprite, but the

enemy strike force are larger and more formidable still, though less nimble. To avoid the planes, and collect the energy packs, you must use the Spirit's low flying capability to the full, but beware of trees, buildings and other perils as you skim the ground.



Your only guide is an altimeter at the left of the screen — you will need all your concentration to survive, while knocking out the enemy and collecting your bonuses.

• The special offer is by post only to Dragon User, and closes on 21st November. Applications arriving after that date will not be eligible, so fill in the form on this page (or make a copy of it) and send it, together with your cheque or postal order for £8.95 to Quickbeam Offer, Dragon User, 12/13 Little Newport Street, London WC2H 7PP, making your cheques payable to Soot Press Ltd.

Please send me  
to Soot Press Ltd

copies of FIRE FORCE at the special offer price of £8.95 each. I enclose my total payment of . . . payable

Name

Address

Postcode

Please allow 28 days for delivery. Offer closes 21st November 1988





lines 299-262) and printed it (the head of the postscript). Every time you change axes, use option 5 so the menu to choose the x and y-axis ends is necessary.

From option 3 you can select twenty-five byte directory entry in cylinders. The part which is the directory is in letters (the rest is the file number). If you want to convert to decimal type PENTM256 where 2 is the file number). A summary of the meaning of the entries is also printed. (There used to be a command to print more cylinders per line — adjust the printer codes where shown if your printer is different to mine. Lines 2290-2296 read each directory sector and print it in the required format.

Option 1 gives the same information in a more convenient form. Line 4040 again reads each directory entry to get the name, FILE, the extension, DIS, the flag, IF, and an entry PACT to PACT0. Line 4050 calculates the track and sector numbers for each directory block. The subroutines starting at 4060 now actually make the first part of the file from the disc. The file is given a date and time in the following information (first number = 50 or 60 for date time, which have no header, second gives type (1=DATE 2=TIME) third

and fourth gives file address in binary (the fifth and sixth give length, seventh and eighth give more address of binary file. For each pair of numbers use 256\*A+B to calculate the address as before. That the last period gives all this information, as well as if the file is listed as protected.

The protection subroutines again do a checksum and protects it (providing it is not a data file, so you may wish to write to base). Renaming line 4070 will protect data files as well. Thus, a whole file may be protected as one extension, or file protection removed. If you have not listed a file by mistake (if anything you have not saved one on top of a file) option 6 which calls lines 5000-5030 changes the flag back to unprotect entry.

DisplayDOS automates really backs up the directory on track 15. If you accidentally corrupt your directory lines 4000-4070 will replace it with the backup track. DIS BACK checks the facility in your program if you have CommandDOS — you will copy a whole track and lose all your programs (it would be simple to rewrite the given routine, however, and give yourself the peace of mind of a track 15 by copying track 20 to

track 15).

The starting routine provided may also be useful for other programs. Since it gives a better code for the error before returning you to the menu. Normally if you use DISK you get an error number which has to be looked up. Line 170 checks automatically that your printer is connected properly — always better than asking the user to confirm that he got a good check. A summary for the disc drive is

IF PEEK(JPHC005)=65 THEN action where action might be loading a file from disc, etc. Thus a program could load from either disc or tape, automatically sensing which to use.

I am sure that you will be able to think of at least a dozen of using the directory, eg to load all files with a certain extension or level of files starting with a certain letter. Well good, starting is quite easy to do (except if you might want to program to give a name to files you have inadvertently saved without one. Have I said that one final word of warning — don't try any program using SWATIC on a disc unless you have a backup copy. A small mistake in the program could lose everything!

```

1 OPEN DIR:DISK (1)=5, 0, 0:OPEN: (2)=4, 0:OPEN: (3)=3
2 OPEN: (3)=0:OPEN:
3 IF (3)=0:OPEN: (3)=0:OPEN: (3)=0:OPEN: (3)=0:OPEN: (3)=0:OPEN:
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338  T953:=A[953];T954:=A[954];T955:=A[955];T956:=A[956];
339  T957:=A[957];T958:=A[958];T959:=A[959];T960:=A[960];
340  T961:=A[961];T962:=A[962];T963:=A[963];T964:=A[964];
341  T965:=A[965];T966:=A[966];T967:=A[967];T968:=A[968];
342  T969:=A[969];T970:=A[970];T971:=A[971];T972:=A[972];
343  T973:=A[973];T974:=A[974];T975:=A[975];T976:=A[976];
344  T977:=A[977];T978:=A[978];T979:=A[979];T980:=A[980];
345  T981:=A[981];T982:=A[982];T983:=A[983];T984:=A[984];
346  T985:=A[985];T986:=A[986];T987:=A[987];T988:=A[988];
347  T989:=A[989];T990:=A[990];T991:=A[991];T992:=A[992];
348  T993:=A[993];T994:=A[994];T995:=A[995];T996:=A[996];
349  T997:=A[997];T998:=A[998];T999:=A[999];T1000:=A[1000];
350  T1001:=A[1001];T1002:=A[1002];T1003:=A[1003];T1004:=A[1004];
351  T1005:=A[1005];T1006:=A[1006];T1007:=A[1007];T1008:=A[1008];
352  T1009:=A[1009];T1010:=A[1010];T1011:=A[1011];T1012:=A[1012];
353  T1013:=A[1013];T1014:=A[1014];T1015:=A[1015];T1016:=A[1016];
354  T1017:=A[1017];T1018:=A[1018];T1019:=A[1019];T1020:=A[1020];
355  T1021:=A[1021];T1022:=A[1022];T1023
```



# DRAGON & TANDY COLOUR OWNERS ...

## 3 NEW RELEASES



### CUTHBERT & THE GOLDEN CHALICE

Legend tells of a fabled GOLDEN CHALICE that can bring wealth and long life to whoever it belongs being placed at the end of a long quest. Having heard these tales Cuthbert sets off to try and collect the chalice but will be surprised when many others have it too. The quest is filled with challenges that will mean many dark shadows fall in. Other hazards include poisonous snakes, pygmies of the moving forest and giant deadly spiders. Will you be able to take on the challenge and guide Cuthbert to the GOLDEN CHALICE?

DRAGON 32/64 TANDY COLOUR 32K CASSETTE £5.95



### TANGLEWOOD

If you go down in the woods today you're more likely to get lost than to find adventure like TANGLEWOOD! There are five characters for you to control, each one of which behaves differently and has different problems for you to solve. As the game goes, you must avoid contact with the evil witch who will continuously try to thwart your plans. There are over 300 accessible locations and 1000 items, all in colour graphics the woods. Dwarf Dens (platforms, ladders and ladders), Golem (a 3D maze on five floors) and a water vent only just one. The entire game loads in under TANGLEWOOD provides many helpful features including the ability to return to a previous position without having saved it or tape. There is no random death and although it's a puzzle you'll find it completely worth. Praise to be very credit to go to TANGLEWOOD is also a real time game and even if it's quite possible to get lost which are easy during the day!

TANGLEWOOD ON CASSETTE FOR DRAGON 32/64 & TANDY COLOUR 32K £5.95



### WIZARDS QUEST

If you're played Star Trek on the Spectrum then you'll love WIZARDS QUEST. An Arcade Game on CD-ROM for one of the all time greats.

WIZARDS QUEST ON CASSETTE DRAGON 32/64 TANDY COLOUR 32K £5.95

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# Curtain up!

Terry and Derek Probyn provide a theatrical opening

TAKE your Dragon to the theatre with a machine code routine to split the screen horizontally and reveal a hidden secret. Similarly, the curtains are opened by splitting the first screen down the centre and revealing a delightfully left and right to reveal a previously saved screen image/health.

This could be used to hold and display an actual title screen while your program is loading, and then to open the curtains to reveal your central hidden title or game screen.

The routine works by moving the bytes of pages 1 to 4 left and right alternatively from the centre outwards and replacing them with their equivalent static byte located in the screen scratch on pages 5 to 8.

The scratch code should be loaded first

of all. It is 100 bytes long and resides near Ramtop at address 32640. The code can be loaded either by the Basic Hex Loader in listing 1, or alternatively for anyone preferring to use their own assembler by the assembly code in listing 2.

When loading into basic, it is necessary to reserve all eight graphics pages by use of the POLGRAPH command. Pages 5 to 8 contain the hidden screen to be revealed and pages 1 to 4 contain the first screen to be a saved.

Space is reserved for the machine code by CLEAR 100,32640. This is shown in line 20 of the Hex Loader (line 65663, 32640) otherwise you won't be able to open the curtains.

Each line of the machine code is translated page 5 to 8 are translated on pages 1 to 4. This means that the latter are always split

down, so that if you require the original screen again, it must be re-drawn before any further SCREEN command. Page 5 is 8 however the hidden screen will still reside in memory and need not be redrawn.

Because PMODE 80 and 128 use a 160-pixel screen width, and the machine code is given a 32 byte width, then your program should use only PMODE 1, 3 or 4.

A demonstration program is shown in listing 3.

In line 58, the machine code is protected and the necessary eight graphics pages are reserved. Lines 60 to 620 contain the draw data for the first screen, pages 1 to 4 and lines 660 to 680 the data for the hidden screen, pages 5 to 8. Line 630 pulls the rope to open the curtains. Line 640 pulls the rope to close the curtains.

## Listing 1



```
10 BASIC KEY=LOADER FOR SPLIT &
20 OPEN R/O ROUTINE
25 CLEAR 100, 32640
30 CLR:PRINT "SPLIT-SCREEN LOADER"
40
45 FOR X=72640 TO 32740
50 READ A#
60 CHECKSUM=CHECKSUM+VAL (STR#A#)+A#
70 FOR L=VAL (STR#A#)+A#
80 NEXT
90 IF CHECKSUM=7567 THEN PRINT "DATA
10 ERROR-RECHECK ENTIRE!"
100 DATA C,0F,24,04,8E,96,00,31,
96,C1,00,27
110 DATA 07,5A,A6,03,A7,80,20,FE,
80,41,35,04
120 DATA 34,04,31,AB,20,30,AA,10,
8E,1E,00,20
130 DATA C,20,E2,8E,06,1F,31,84,
C1,00,27,07
140 DATA A,A6,1F,A7,84,30,1F,30,
F3,8D,1C,35
150 DATA 04,24,04,31,AB,20,30,AA,
10,8E,1E,10
160 DATA 0C,02,20,E0,3E,04,C1,00,
27,12,5A,34
170 DATA 04,30,AB,34,10,30,8F,1E,
00,5A,84,35,10,E7,84,30,30
180 "TO SAVE CODE, ENTER CHARACTER
"SPLIT SCREEN", 32640, 32740, 32640
```

## Listing 2

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## Missile attack

*Destroy deadly alien missiles in a game by D King*

**MISSILE ATTACK!** is a version of the arcade game Missile Command. You must protect Earth from alien ships that launch missiles from orbit onto the planet surface. You must shoot down by deadly alien missiles. To do this, the end of the missile trail must be caught in one of your engines. Up to four missiles can be on screen at one time. It's a really exciting game that will reduce your alien obsession to nothing but a distant memory.

Your class are still at the bottom of the screen with your three bases left: right and centre. When you're caught by the right batsman, you're out. A reward will be fired from one of these bases. The number of rewards is a schedule is displayed underneath it. If all bases have been destroyed you're no longer in. Your light is moved with the joystick and will wrap around the left and right side of the screen. The game ends as long as you have only one remaining (not the base).

The nation is split in two and

machine code: the machine code being the man's gait and features, arms, torso, gait, etc. It would be difficult to take in all at once. The manual program sets up the random positions, stored on speed of each machine, and then the people begin and choose the program to follow.

The difficulty for each level can be judged by comparing the number of missiles in 400-400 (400,000) to the number of your missiles in each case.  $M_i$  is the number of missiles up to a maximum of forty, and  $S_i$  shows the speed range for the missiles. This is score table can be used in any program with a little adaptation. The evaluation is in line 730 sets the maximum number of missiles.

During play you gain ten points for destroying a single malfunctioning or damaged component and around 100 points are added to your score. Missions

and receive 100 pounds and place into another 200 pounds. This are given, and you may trade 10000 pound a if necessary.

To start the game start by going online:  
 1. This is the basic program. Do not run it!  
 Just look at it to see what type of button number  
 (0-9) enters entering the string of the  
 digits is being 2 followed by ENTER. There  
 is a check box. When this complete figure  
 has saved after the Basic code (CODEM)  
 MESSAGE: #H2324#H2388#H2324#  
 You enter this as parts don't forget to use  
 PCLEAVE before loading TO play the  
 game loads in the BASIC program and PCLEA  
 it will load it once you code.

If you don't feel like endorsing the program, learn supply & demand on tape with no sales pressure on one side. Send \$2.00 to Demand King, 68 Fairham Street, Orem, Utah, 84057. Refund \$2.00.

U.S. Census Bureau

```

10 REM *****TITLE *****
11 REM *****DESCRIPTION *****
12 REM *****INVENT *****
13 REM *****TOP *****
14 REM *****INITIALS *****
15 REM *****NAME *****
16 ***** SUBROUTINE *****
17 ***** START *****
18 ***** INPUT *****
19 ***** OUTPUT *****
20 ***** PRINT *****
21 ***** END *****
22 ***** END *****
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# Analyzing costs

L Pitz's worksheet helps you update accounts and manage finances

ANALYZER will enable you to put your Dragon to work analyzing purchases, budgets and projects. It is a worksheet editor that lets quantities change and results are updated. This allows you to ask what if this amount is changed will be the cost or income or profit?

The quickest way to access the Analyzer is to refer to an example (Fig. 1). A super market price inquiry.

The worksheet is divided into cells identified by letters (columns) and number rows. To get into cell A50, move the cursor to it, you may change the value in A50 with the now 99, the value of FOR, 20, 25 and 30 after change.

Any cell that contains a quantity will be used in a calculation with other cells. With Analyzer you can add, subtract, multiply, divide, use % to a power and calculate percentages. You can also sum columns and rows. Row and column headers can be displayed plus deleted or left blank anywhere on the worksheet. Any column and row can be used for headers. Data can be stored in three or six and sent to the printer.

Analyzer uses the standard text screen and displays only four columns and twelve rows at a time. The total display is 160 columns and 120 rows for a massive 1920 cells. This screen always displays the column and row starting by a row and number starting at the first READY prompt after the header is done. But the program is ready for more action.

## Cursor control

Move the cursor around the sheet with the keyboard. The cursor is a flag in one of the 1920 cells. A 100 cursor moves to the next screen. For better viewing use the shift left and right keys. You can move from the top left corner of the display to now go to the last column D. Use the shift left or right as a home key. I suggest you to the first cell in one screen and in the READY prompt is replaced with a 1 or 2 for the following options: Press 10, 100, 1000, 10000 to a business or a calculator key.

Again, any number or letter of number in the READY prompt changes to an INPUT prompt. You can then continue to enter words or numbers up to six characters. When the cell character is typed the cell sounds but you can't fill it again with the left arrow and make corrections. Press ENTER to transfer the data into the cursor cell. INPUT can be accepted anytime with the CLEAR key. All prompts are announced. Analyzer will perform up to 1920 calculations and each calculation can have seven operations involving as many cells. Move to the cell where the result is to appear. Now press the plus key (+). The READY prompt will remain steady change to a FOR MULA prompt. Any cell number in a formula

must have two digits. Therefore the first cell multiplies by the second cell is entered as A20\*B20. Once the ENTER key is pressed the formula is displayed below the READY prompt and is whenever the cursor is at the cell.

On the survey sample J20 shows A20\*B20. If only one cell is entered as a formula it has the effect of duplicating that cell into the cursor cell. For example, this can be useful when you wish a budget or common unit amount. In each column is the next changes (and increases) all the cells can be changed one at a time. To use a number to a power use the up arrow, eg A20 up to 100000. Note that raising to 0 is not equal to zero and 10000 cube roots are.

Once formula and sums are done, Copy, paste, delete, the program moves and this should be entered first or last. Copy is an integral formula and used as INPUT ERROR message may appear. After 100 calculations are entered to MC HOCM message will show. Press any key to the HOCM message to return to READY. If you change your mind you can return to READY with the CLEAR key.

For access to a dozen other commands press shift V). The READY now changes to a command and prompt screen. Press then various instructions to execute the action of the cursor. Attached to belongs to HOCM can be entered with the CLEAR key where error responses usually result in INPUT ERROR. Some require you to press V) to cancel any error with the command in correct sequence to the HOCM prompt. Press 10 to allow for a single pressing ENTER to return to the screen.

Now recall a value like 100000 to a screen. Use it with + and on the screen is how the value changes. All calculations are adjusted and always result in a value. If you are using a cell in row 99 then there is MC HOCM.

Print is for hard copy and print is you for the start row to be printed and print is the end of the cursor. You have the option of print negative or without cell and line printed.

Print allows you to go to the central column and to 100 characters. To erase the prompt press ENTER after (T) use about with the CLEAR key. An 80 character prompt must be used for printing.

Copy is for a screen saving and a display, or copy saving and taking along when moving from one page to the next. The large number and last 2 are in for position key when the COPY prompt appears. The first number is a start row and second is only letters and numbers. The automatically limited to 0 letters and 10 numbers are required.

If you are displaying a line at the top of the screen. The number you are displaying a

grand total cell number of all cells from a row and row.

Print means the last row of the last cell of the column 7 characters of the result of a calculation the screen will print and the cursor is at the end of the screen. Choose a column to enter the Don't allow you to completely blank the screen and all information.

Remove cells along a row from the cell at the cursor cell. You must now note the starting column and start to enter cells. Up to 20 rows can be deleted.

Copy sums the columns into the cursor cell. You must note the starting cell and sum of each cell. The program always goes to 10.

These items apply to much faster than the formula entry and should be used in preference. The screen will be a cell and contains a sum you are copied and paste the READY prompt.

Display the number of columns for accuracy of calculations. Set to 1000 and placed initially Money. You can enter at any time from now to four if large numbers are involved the cells may overflow and print over the next cell. To ensure the cell goes to none and is the next cell blank. It is not enough to see the number, entering them and thousands or millions. Remember the Dragon will be to display more columns in a row.

Print will display any column in the last column as well as the column in the column. The cursor must be at the first column at the time. Pressing V) after 100 times it off. The cursor control moves to the first column with Print.

Now that the program works through for much more than printing, then clear screen. A formula uses a cell I will use the sum displayed and the updated sum on the row copy.

Copy, delete, save the number of cells is on screen with a cycle from now to the screen with the screen key. When a number of values are updated is at the time is already saved. It is a copy and save. However, you will know when a copy may cause an overflow or cell in error. When a formula is changed, it is not deleted and then the new formula becomes the last to be calculated.

Copy lets you check a value in a row.

Print will display any row in the top column in the

Text means you delete what is a copy. If a calculation results the summary screen after long.

## A test run

Move to A20 type 1000 and press ENTER. Move to B20 and enter 99 one right arrow and press (+). The formula prompt should now have appeared. Enter A20\*B20 and C20 should give 99 as the

result and the formula displayed under **READY**. Move down to **C20** and enter the formula shown above and enter the address if you're **RECAP**, accordingly enter **C20** to **C20** to continue again. Move down to **C20** and press **C** then enter and the column is summed into **C20** and press **C** to bring up the command menu. Press **C** then **I** and the column is summed into **C20** with the appropriate message under the **READY** prompt. Move to **D20** and press **I** then **I** then **A** to move the cursor.

Press **Alt+PgDn** now then color fill to the prompt and then **A**. This should move the desktop window to fill the left.

Press  $\downarrow$  then F then enter 4 at their point C and the result from C13 is displayed on the bottom line (Flow). Press  $\downarrow$  and a blank C13 and D13 appears on the Flow Press  $\downarrow$  then 1, then enter D and the final line implies 1 for normal topology Press  $\downarrow$  then  $\downarrow$  once and exit back at R10. The bottom line now

Business Process Management (BPM) is a management approach that focuses on the optimization of business processes. It involves the identification, analysis, and improvement of the flow of work within an organization. BPM aims to increase efficiency, reduce costs, and improve the quality of service. It is a continuous process that evolves as the organization's needs and the external environment change. BPM is not just a set of tools or a one-time project, but a strategic approach to managing the organization's operations.

That should give you a little hint to *analyze* and give the rules you just spent the last 10 minutes [7] like this process: the revealed key is *key* a return to the *KEY* named as an *SECRET* *SECRET* message.

### Troubleshooting

Some errors regularly *do* crash any code for the normal reasons, such as overflow, divide-by-zero, if the program creates any GOTO's and remove or alter your input. Passing CLEVER returns to the READY prompt except during updates. Subsequent updates "You may press RESET then enter CLEVER" GOTO's for program control before actual processing begins. Sometimes the DRAGON will seem hung (all it is actually doing is waiting for data which must be reentered) and will

The program PCREES author(s) and the host school have agreed to forward no more than 10% of the net proceeds to the author(s).

Listing 11: `git commit` you can commit the new modifications and the village for 100 miles in 30 seconds. They should all say, 97 on my way to it. `git commit` will push the data to the server. 7. Once the program is running, change the data to 100. Give it 100 seconds when the initial run is complete. Save the program before running. You will see the data in the 100 and 100. The program will be 100 and 100 and before the display works. Add the new data to 100 to move to any cell. Now enter the data. `git commit` will push the data to the server.

You may not want all COMMAND options with an IPsec connection. If the link is private, I'd suggest substituting 21 as the local IP and 22 as the remote IP and 23 as the local ID and 24 as the remote ID. I can't tell how many of you use the numbers 21-24, but I do.

I will supply a program or cassette if you can send a money order (not a cheque or postal order) for \$5. Australia including air mailing to: L. Pils, 71 Woodville Road, Melbourne 3168 Victoria, Australia.

Figure 1. CONSUMER PERCEIVED THRESHOLD SIGNIFICANTLY

	A	B	C	D	E	F	G	H	I	J
#	ITEM	UNIT	QTY	COLG\$	WCOL\$	QW\$	PRG\$	7/11		
1	-----	-----	-----	-----	-----	-----	-----	-----		
2	FLOUR	KG	2	1.28	1.28	1.28	1.32	1.28		
3	MILK	LITRE	2	1.41	1.41	1.41	1.41	1.38		1.00
4	BREAD	750GME	1	1.28	1.25	.99	1.24	1.28		
5	SUGAR	KG	2	1.19	1.11	1.28	1.28	1.28		TOTAL
6	-----	-----	-----	-----	-----	-----	-----	-----		
7			TOTAL	5.85	5.83	4.9	5.19	5.2		25.5
8									STORES	5
9									-----	
10									MEDIA	5.1
11								PREV'S	MEDIA	4.95
12								-----	-----	
13	DATE	5/24						PRICE	HOUE	5.25

Figure 2 (width-grid)  
HOME EXTENSION

	A	B	C	D	E
#	ITEM	UNIT	MEAS	QTY	COST
1					
2	FRAME				
3					
4	2X6	FOOT	3.50	150	525
5	2X4	FOOT	3.50	200	540
6	2X8	FOOT	3.50	200	700
7	NAILS	LB	4.75	5	23.75
8					
9				TOTAL	1748.7
10	ROOF				
11					
12	SHEET	EACH	28.00	5	140
13	CLIPS	25	6.00	2	12
14	NAILS	LB	5.00	1	5
15					
16				TOTAL	117
17					
18			GRAND TOTAL		1865.7

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FRAME	EXTENSION	TYPE	DATA	SIZE
FRAME				
0000	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0001	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0002	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0003	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0004	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0005	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0006	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0007	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0008	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0009	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0010	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0011	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0012	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0013	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0014	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0015	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0016	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0017	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0018	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0019	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0020	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0021	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0022	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0023	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0024	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0025	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0026	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0027	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0028	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0029	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0030	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0031	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0032	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0033	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0034	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0035	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0036	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0037	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0038	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0039	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0040	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0041	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0042	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0043	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0044	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0045	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0046	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0047	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0048	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0049	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0050	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0051	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0052	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0053	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0054	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0055	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0056	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0057	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0058	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0059	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0060	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0061	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0062	FFFF	0, 0, 0	0, 0, 0	0, 0, 0
0063	FFFF	0, 0, 0	0, 0, 0	0, 0, 0











If you've got a technical question write to Brian Cooke.  
Please do not send a S&E or Brian cannot guarantee to  
answer individual inquiries.

## Dragon Answers

### Line jump

IN ORDER to jump to a line of program I wish to replace several IF THEN lines with a machine code routine. After the machine code line, make the jump to the line number (is there any way to do it if the return to line is a different line number other than the one which follows the BASIC command)?

Derek Probyn  
8 Emberton Road  
Greenford, Staffs  
DY6 7LJ

IF YOU use the machine code program listed below this will allow you to call your routine as follows:

**GO3C** code line  
Where **GO3C** is the address of the routine and **line** is the line number to jump to at the routine code line is not needed. If it is not then the program continues as normal.

**START** **SR** 35342 "Skip over comma"

"Insert your code here"  
35344 "Check result status"  
35345 "Go code GO3C"  
35346 "Skip line number 35342"

### DOS help

IN THE August edition of Dragon User you published a query from Mr McCannish about using DataDOS PCMC equipment. I have a copy of the DataDOS Advanced (A) programmer which gives a lot of help and information about particular DOS routines and a record of what has happened to the DataDOS and gone through it putting in comments on sections of code. If you would publish my name and address in your column it would be happy to help anyone with DataDOS queries.

Gary Coates  
41 The Sorels  
Gorseburgh  
Standard Le Hays  
Essex SS17 7JG

OUR thanks to Gary for his offer of help. If you do write to him then please mention an S&E if you want a reply!



### No RAM

USING THE Advanced assembler (on tape) and attempting to assemble it on an ORG of 32000 results in an error. I assume this is because it is not RAM. Is there any way to assemble directly to those addresses to provide correct source code for EPROMs?

D P Foster  
31 Moorcroft Road  
Farnham

YOU ARE correct in assuming the problems caused by there being no RAM at 32000. If you run Advanced with RAM fixed here then it will happily assemble direct to that area.

The solution is to use the PUFF assembler directly to place the binary code elsewhere in RAM while still generating code which is correct to run at 32000. For example to store it in the graphics area use  
**ORG 32000**  
**PUT 392**

### BIN files

I WOULD like to know how to load and save standard binary (BIN) files to and from disk from machine code. Is there any chance of an article on DragonDOS appearing in Dragon User?

Steve Prescott  
7 Hill Farm Way  
Southwick, Sussex  
BN4 4JU

IF YOU want to make your machine code program compatible with all the versions

of DragonDOS then you should use the standard DOS routines (open/close/read/write file etc) rather than jump into the RAM in the middle of the SAVE and LOAD basic commands.

All the information you need is contained in A. Probyn's guide to DragonDOS available from Greenview Software, 20 Grosvenor Road, Bournemouth, Dorset BH2 2BS for £3.99 including post and packing.

### 'Gapped'

I WOULD like to know what a gapped file is and how I can use it to place machine code being loaded from cassette to different places in memory.

Paul Judge  
18 Moorcroft Road  
Berkley, B10 4DQ

WHAT is normally seen called as a gapped file is that produced for ASCII data on the Dragon. All files are made up of blocks of data 255 bytes long, but unlike Basic and machine code ASCII files have gaps of about 15 seconds between each block to allow the computer to stop and start the tape while reading in the data.

The length of blank tape between the blocks is technically known as the 'inter-block gap'. Binary files normally have a split length inter-block gap so it is hard to see how you could use gapped files to load in machine code.

To load code at a different address to that which it was saved from you simply need

to give OUTASM a (or a combination of) offset, eg **OUTASM #0001** (load FILE at 1000 bytes higher than it was saved from).

### Kung-fu

I RECENTLY saw a game called 'Way of the Fighting Fist' on a boxed tape. Is this game available for the Dragon 32 and if so where can I get it?

Nigel Cooke  
245 Colston Street  
Sheffield S1

EXPLODING FIST is produced by Melbourne House but there is no Dragon version available. A couple of kung-fu games available for the Dragon which are worth considering are 'The Master from Kinky Games' at £5 and 'Shogun Master Plus' from Quickvision Software at £3.99. It is superior to the Spectrum version of Fist in my opinion. Kinky can be contacted at Greenway House, Lutterworth Road, Kinky Leicester and Quickvision at 67 Old Manning Road, Broomfield, Herts.

### Addresses

COULD YOU please tell me how it is possible to find the start and end addresses of commercial machine code programs so that I can make backup copy on another tape. I would be very grateful if you could help me with this project.

Mark Ellis  
87 Cooper Road  
Waltham Heath  
W14 9LH

FOR STRAIGHT binary tape files the following features can be peeked after loading the file:  
**START** 407440 **LENGTH** 5  
**START** 407440 **ENTRY** 407440

Most commercial programs use one form of protection or another so it is fairly simple to find the addresses for them. You should need to copy commercial tapes and of course passing a copy on to anyone else is illegal and you could end up having a very hefty fine if you do.

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**FIGURE 1** FAME voucher containing points as a 50% off coupon for a 100% off coupon.

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**Keywords:** *gender inequality, social norms, gender inequality, gender inequality, gender inequality*

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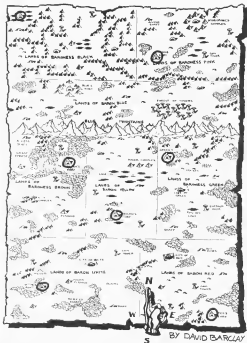
C) The egg co-ordinates which are Y X using the character positions. There are always twelve eggs and therefore 24 bytes.

in this section.

F) The seed or seedlings which are X Y using the character positions. There are two bytes times the number of seed in the island.

The man always starts at (12, 22) and (12, 22).

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**BILLSBOX** Purchase Ledger **£19.99**  
Balance brought forward with 4 debt periods. Can print remittance notes, aged credit list, labels, daybooks, nominal code report. Can link to CASHBOX.

**CASHBOX** Nominal Ledger **£19.99**  
Double entry system posting debits/credits to up to 999 accounts. Prints trial balance, balance sheet, profit and loss, budgets, forecasts, asset trial. Can read SALESBOX/BILLSBOX files.

**STOCKBOX** Stock control **£19.99**  
Records sales, orders, deliveries. Prints low stock list, orders due, valuations, inventory price list, stock movements. Can bulk change prices.

**ORDERBOX** Invoicing **£19.99**  
Prints invoices etc. on glass or pre-printed paper. Can link to SALESBOX or STOCKBOX.

### BASIC 42

An extended BASIC for the Dragon 64

Run your Dragon in 64K mode, while retaining BASIC and DOS. Print on the hi-res screen, using all the standard PRINT commands, and a screen layout of 42 rows by 24 columns. Other features include:

- Full upper/lower case/graphics character set
- 85 DE FINALE characters
- Alternative character sets
- Control key for special characters
- REPEATING keys
- Commands in LOWER CASE (even macros)
- User defined independent WINDOWS
- Fixed, non-destructive window
- CATCH command for automatic return to window
- INVERTED VIDEO (green on black/black on green)
- True UNDERLINING
- Extra PRINT commands and functions
- ROW and COLUMN commands for cursor paging
- LIBRARY lists commands and functions
- Automatic startup of BASIC program
- TEST command for software compatibility
- Takes NO memory from BASIC
- Patched for Dragonos 1.0
- Can load in extra UTILITIES from disk

### HELP UTILITY

Extensions to BASIC 42 includes:

- Change CURSOR character
- SCROLL disable
- PAUSE single step listing
- Enable/disable repeating key
- Enable/disable BREAK key
- Improved TROM (including single stepping)
- Detailed HELP messages
- Expanded ERROR messages

### SPOOL UTILITY

Use a computer while printing:

- 35K print buffer
- TRIPST program turns Dragon into typewriter

**MORE TO COME!** you ain't seen nothing yet!

**PRICES:** (Dragonos 1.0 disk version)

<b>BASIC 42</b>	<b>£14.99</b>
<b>HELP Utility</b>	<b>£5.00</b>
<b>SPOOL Utility</b>	<b>£5.00</b>
<b>Modification for CUMANA DOS</b>	<b>£5.00</b>

Cheques/p.o.s/Further details/dealer enquiries to:

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